Magical Math Results…
and Their Explanations

By: Robert "Dr. Bob" Gardner

When: Friday, September 22, 2017 at 2:45

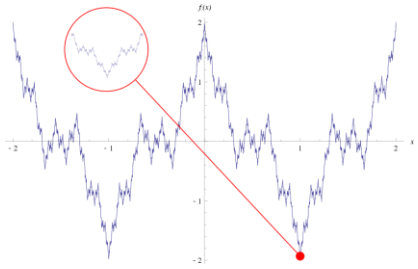
Where: Gilbreath Hall Room 304

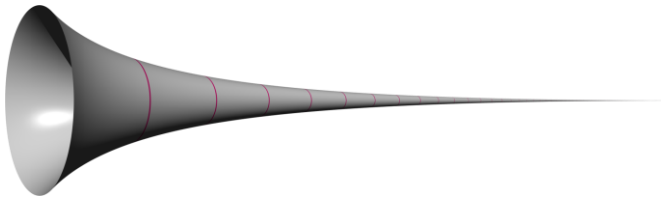
The Banach-Tarski Paradox states that a sphere can be rigidly partitioned into pieces, and the pieces can be rearranged to produce two spheres with the same volume as the original sphere, paradoxically creating volume from nothing! This paradox will be explained, along with several other results involving surprising outcomes. We will touch on other "magical" results: Division by zero, extraneous roots, Gabriel's trumpet, the Rearrangement Theorem, levels of infinity, undecidability, Russell's Paradox, a space filling curve, and a nowhere differentiable continuous function.

This is what mathematicians actually believe

An image from a website concerning the Banach-Tarski Paradox which expresses a "less than deep" understanding of the underlying ideas.

This is not a research talk, but instead is aimed at students. It includes material from Pre-Calculus Algebra (MATH 1710) through Real Analysis 1 (MATH 5210).





More details are available online at: http://faculty.etsu.edu/gardnerr/talks/Magical-math.pptx